

1) a. $\hat{\text{black}} = 30.4954 + .91\text{white}$

b. slope: As the percent of white children increases by 1 percent, the percent of black children who live in poverty will increase by .91 percent, on average.

y-int: If no white children live in poverty, then 30% of black children will live in poverty.

R^2 : 79.5% of the variation in the percent of black children who live in poverty can be accounted for by the variation in white children who live in poverty.

c. Pretty accurate - based on R^2 -value of 79.5%

d. $\hat{\text{black}} = 30.4954 + .91(5)$
 $= 35.05\%$

2) D

3) E

4) D

⑦

• $\hat{\text{Salary}} = 5.84 + 3.4862\text{education}$

• $\hat{\text{Salary}} = 5.84 + 3.4862(6) = \$26,757$

undepicted

residual

$Y - \hat{Y}$

$30.00 - 26.757$

$= 3.243$

5) D

6) E

7) A

8) a. $\log(\hat{y}) = .125 - .005 \log x$
 $\log(\hat{y}) = .125 - .005 \log(12)$
 $\log(\hat{y}) = .1196$
 $\hat{y} = 10^{.1196}$
 $\hat{y} = 1.32$

b) residual $= y - \hat{y}$
 $3 - 1.32 = 1.68$

c) The original data showed a non-linear relationship.

9) $b_1 = r \frac{s_y}{s_x} = .85 \frac{5}{3.5}$
 $= 1.21$

Explanatory = X
Response = Y

$$\begin{aligned} b_0 &= \bar{y} - b_1 \bar{x} \\ &= 67 - 1.21(50) \\ &= 6.29 \end{aligned}$$

$$\hat{y} = 6.29 + 1.21x$$